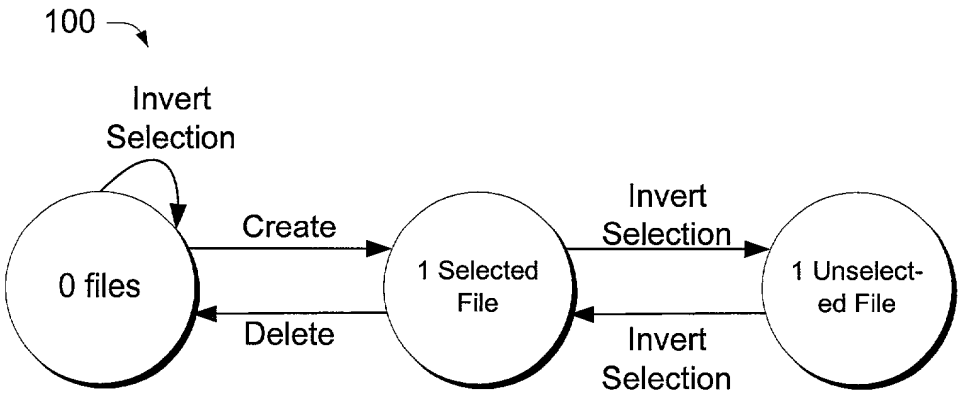
100
Invert
Selection
0 files
Create
Delete
1 Selected
File
Invert
Selection
Invert
Selection
1 Unselect-
ed File

Fig. 1

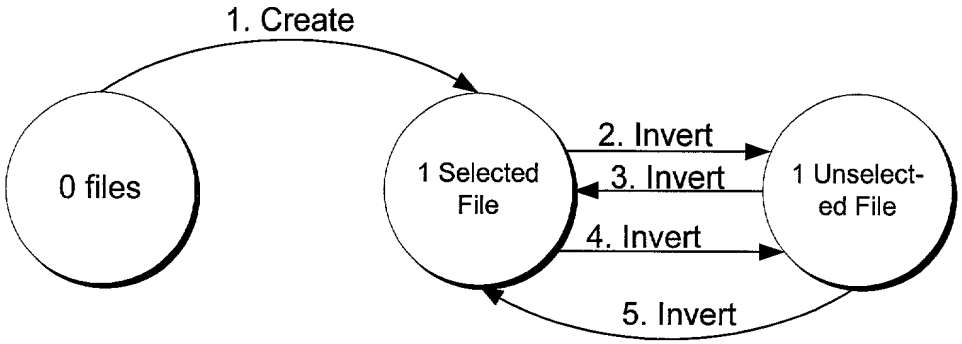
1. Create
0 files
1 Selected
File
2. Invert
3. Invert
4. Invert
5. Invert
1 Unselect-
ed File

Fig. 2

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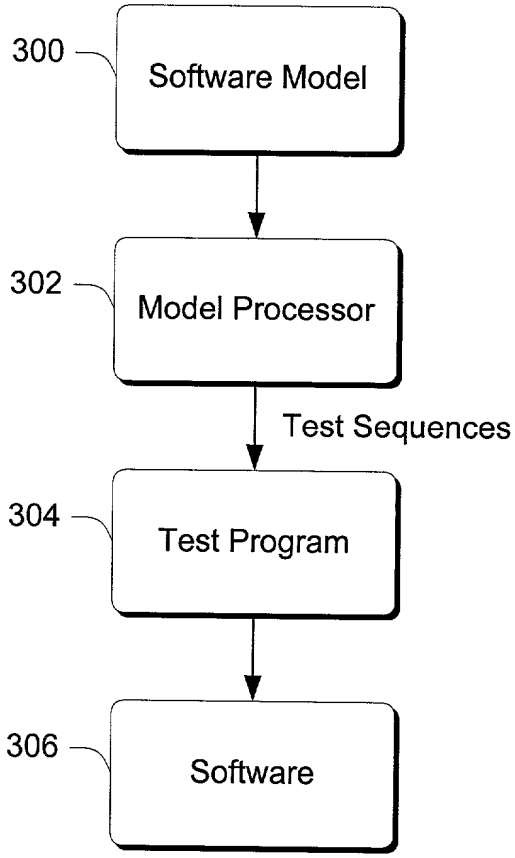

Fig. 3

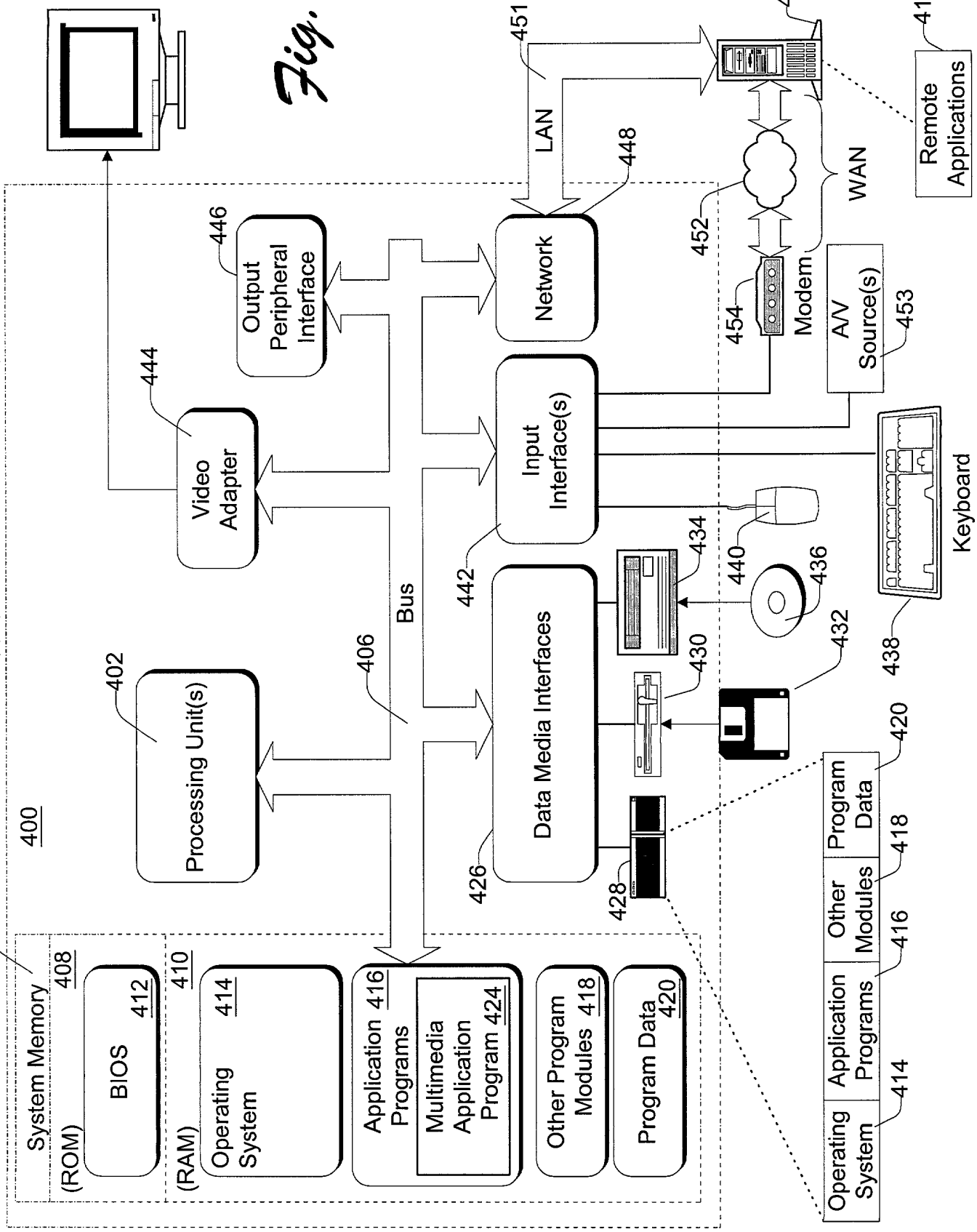
400
404
System Memory
(ROM)
408
BIOS
412
(RAM)
410
Operating System
414
Application Programs
416
Multimedia Application Program
424
Other Program Modules
418
Program Data
420
Processing Unit(s)
402
406
Bus
Video Adapter
444
Output Peripheral Interface
446
Network
448
Input Interface(s)
442
Data Media Interfaces
426
428
430
432
434
436
438
440
Keyboard
LAN
451
WAN
452
Modem
454
A/V Source(s)
453
450
Remote Applications
416
Operating System
414
Application Programs
416
Other Modules
418
Program Data
420

Fig. 4

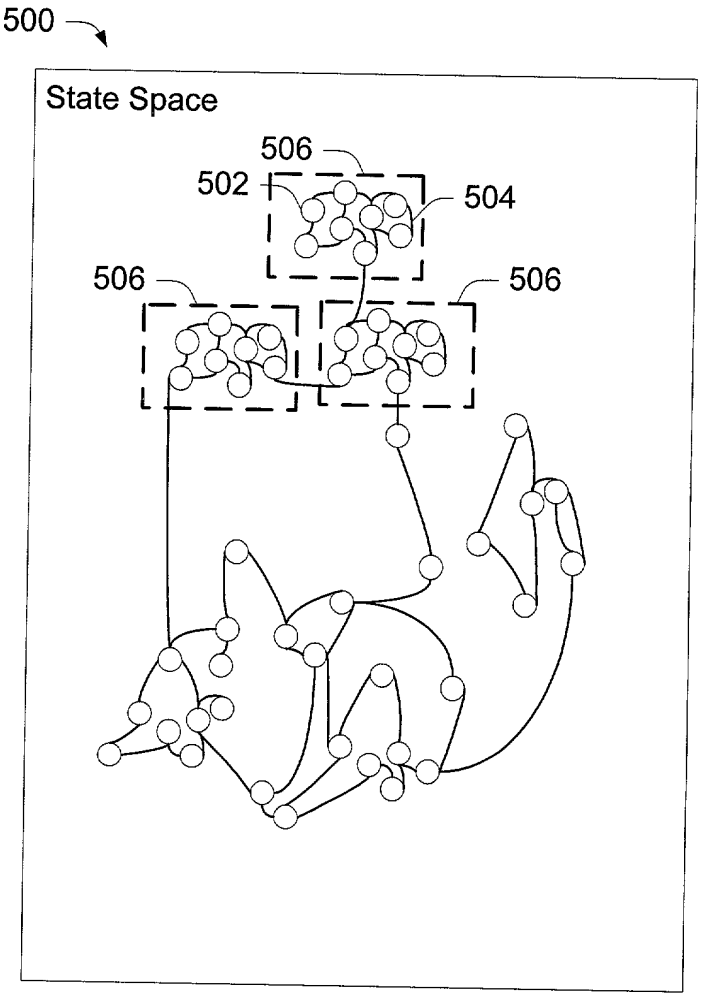

Fig. 5

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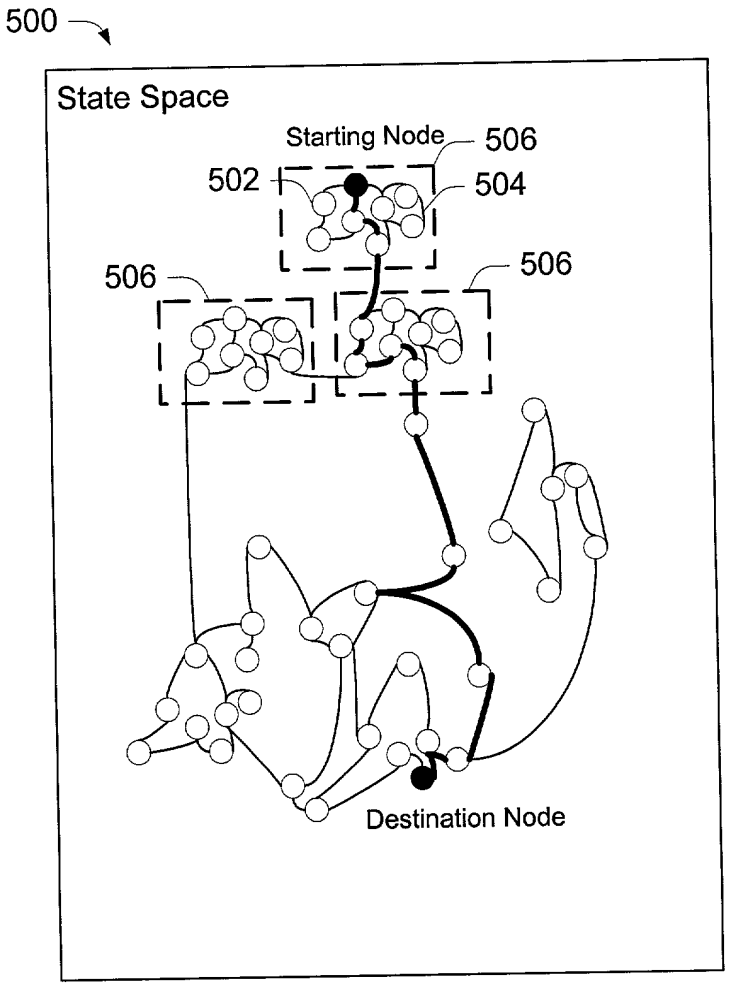

Fig. 6

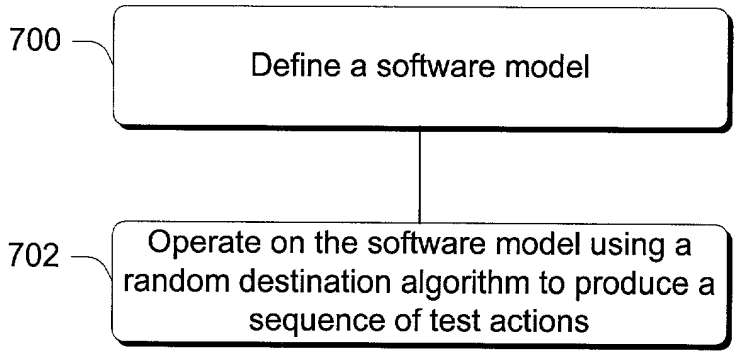
700
Define a software model
702
Operate on the software model using a random destination algorithm to produce a sequence of test actions

Fig. 7

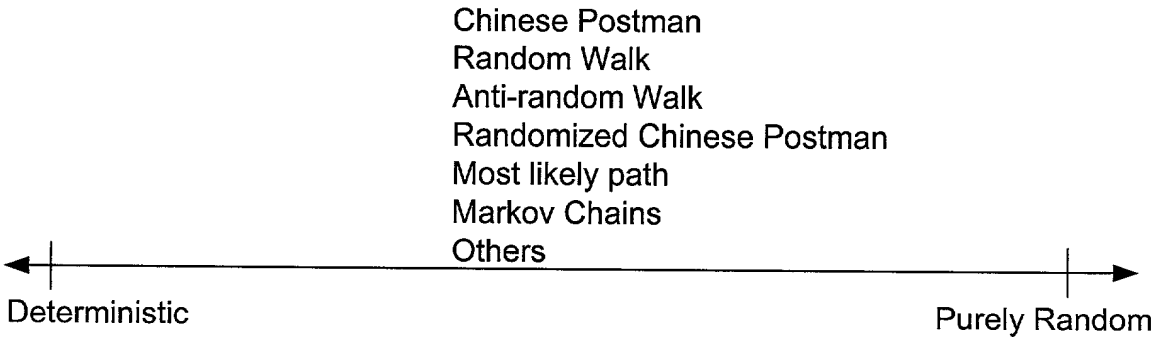
Chinese Postman
Random Walk
Anti-random Walk
Randomized Chinese Postman
Most likely path
Markov Chains
Others
Deterministic
Purely Random

Fig. 8

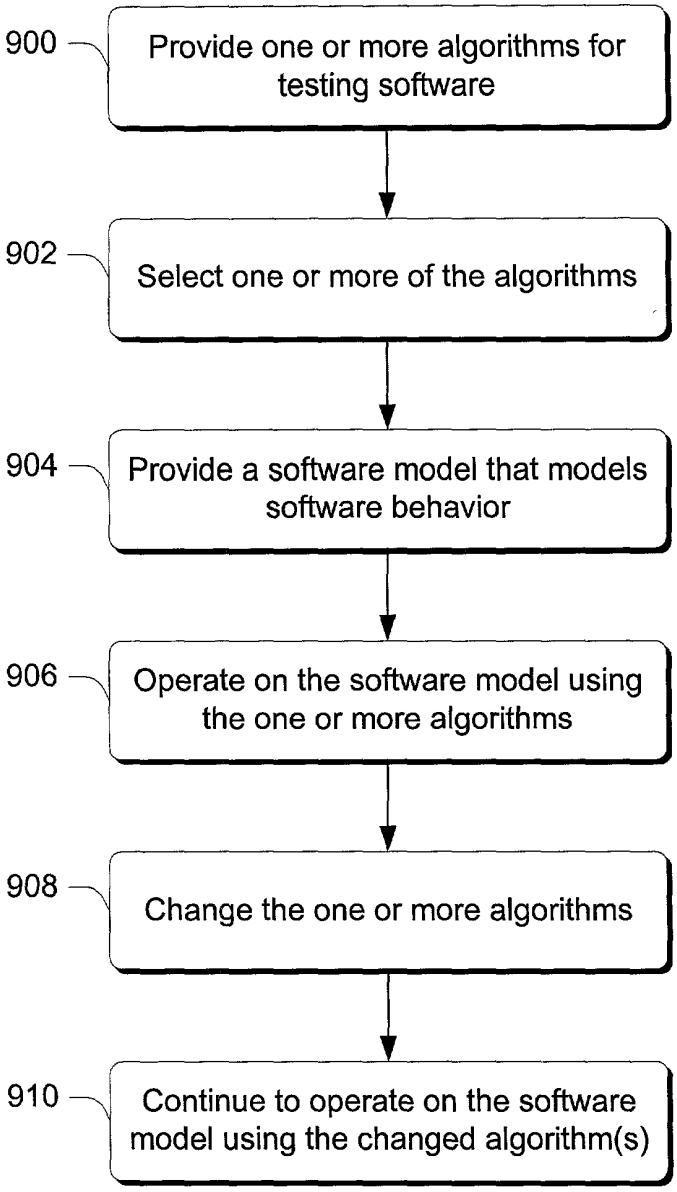
900
Provide one or more algorithms for testing software
902
Select one or more of the algorithms
904
Provide a software model that models software behavior
906
Operate on the software model using the one or more algorithms
908
Change the one or more algorithms
910
Continue to operate on the software model using the changed algorithm(s)

Fig. 9

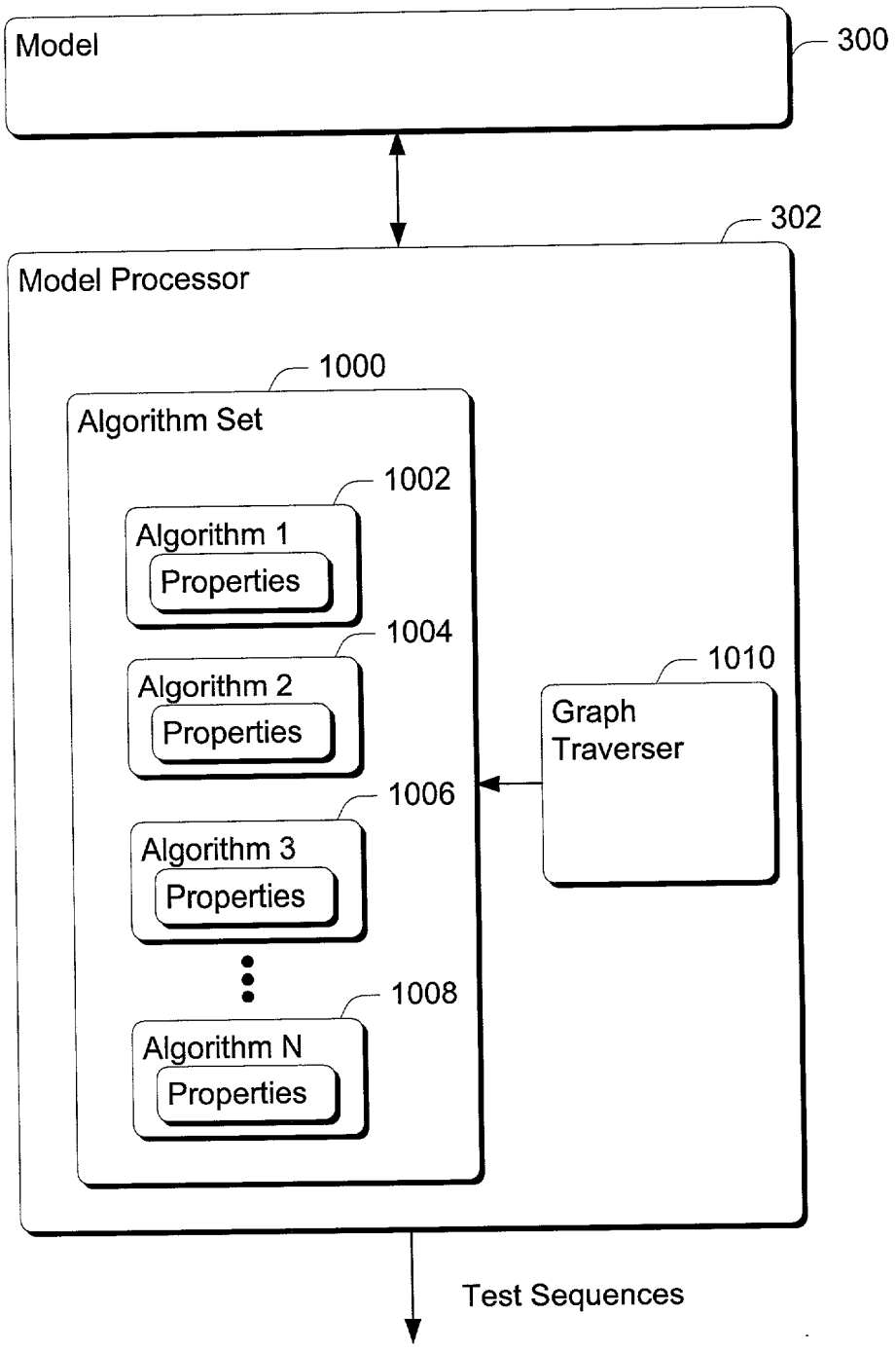
Model
300
302
Model Processor
1000
Algorithm Set
1002
Algorithm 1
Properties
1004
Algorithm 2
Properties
1006
Algorithm 3
Properties
1008
Algorithm N
Properties
1010
Graph
Traverser
Test Sequences

Fig. 10

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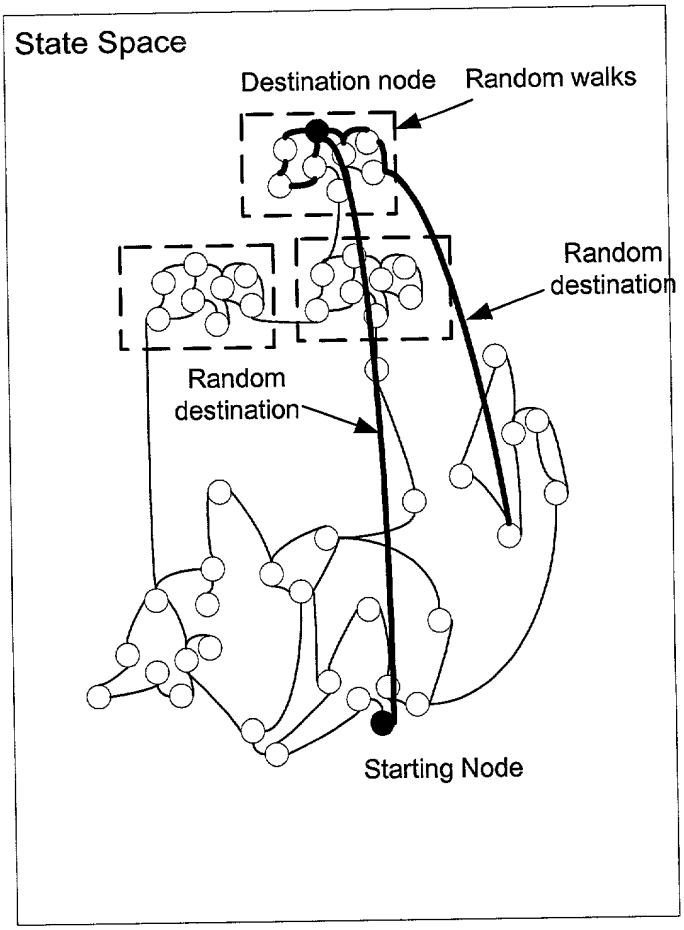

Fig. 11

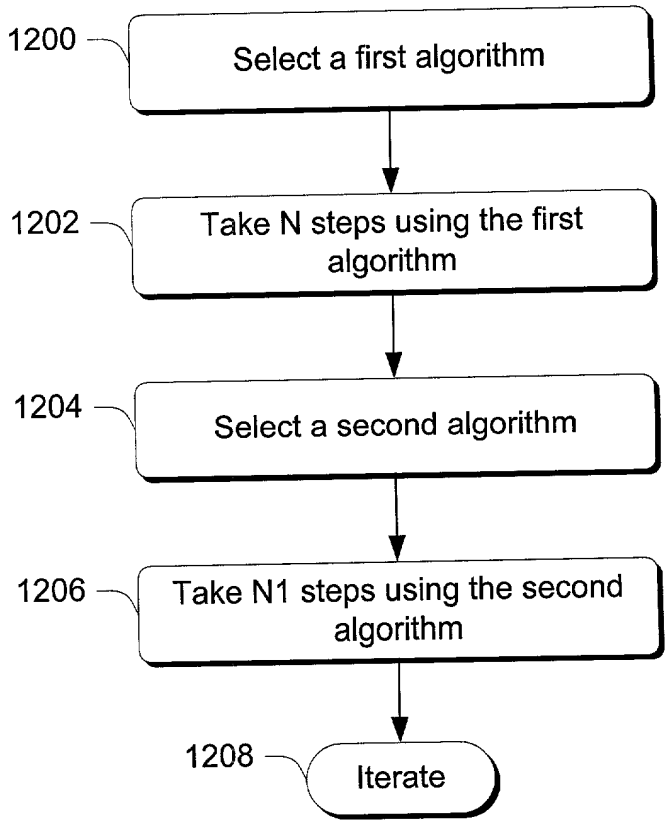
1200
Select a first algorithm
1202
Take N steps using the first algorithm
1204
Select a second algorithm
1206
Take N1 steps using the second algorithm
1208
Iterate

Fig. 12

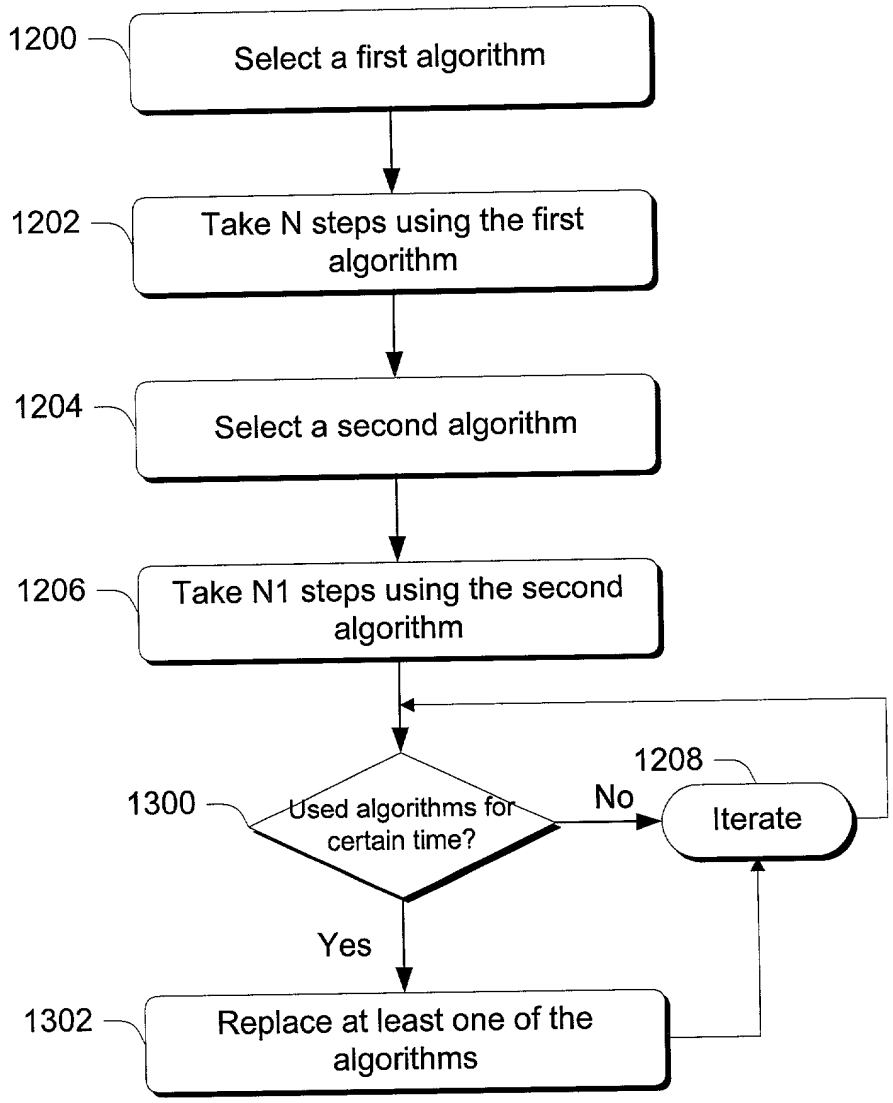
1200
Select a first algorithm
1202
Take N steps using the first algorithm
1204
Select a second algorithm
1206
Take N1 steps using the second algorithm
1300
Used algorithms for certain time?
No
1208
Iterate
Yes
1302
Replace at least one of the algorithms

Fig. 13

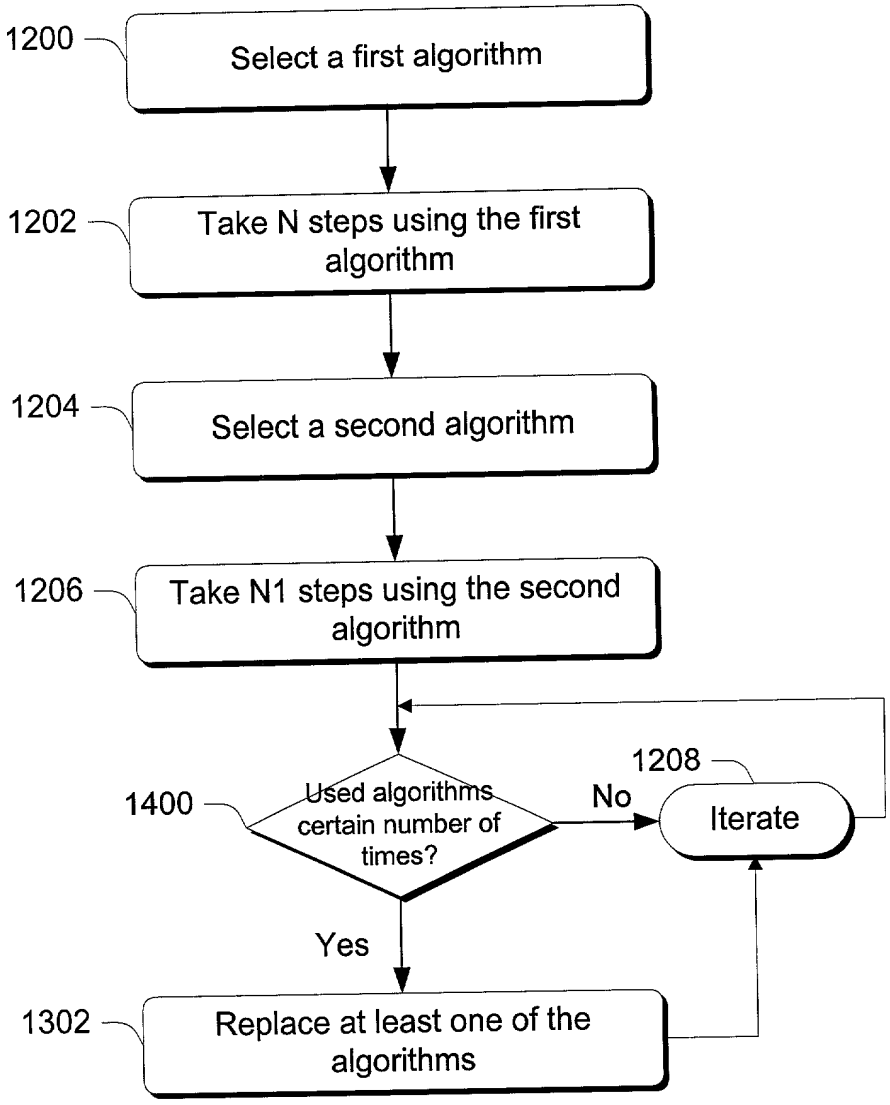
1200
Select a first algorithm
1202
Take N steps using the first algorithm
1204
Select a second algorithm
1206
Take N1 steps using the second algorithm
1400
Used algorithms certain number of times?
No
1208
Iterate
Yes
1302
Replace at least one of the algorithms

Fig. 14

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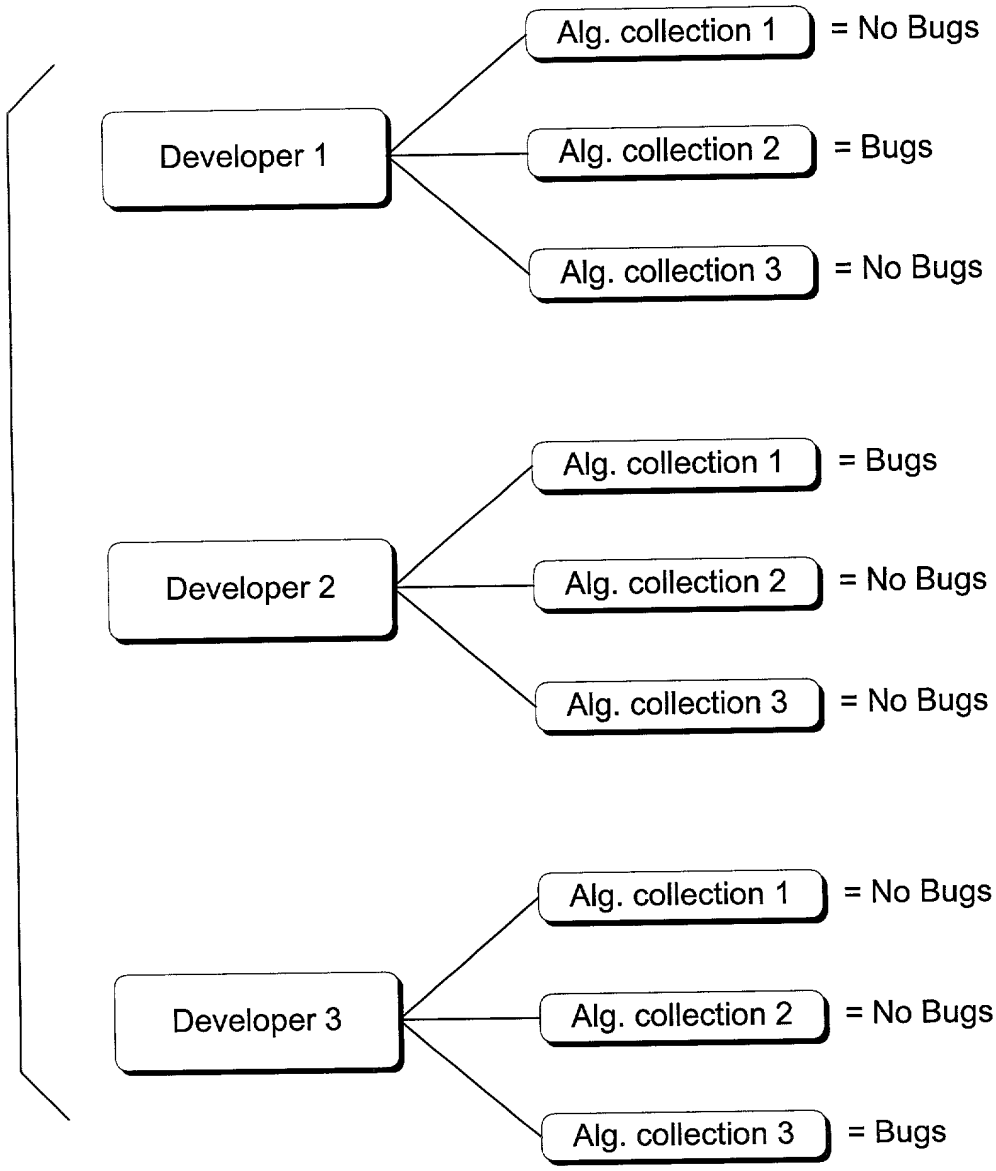

Fig. 15

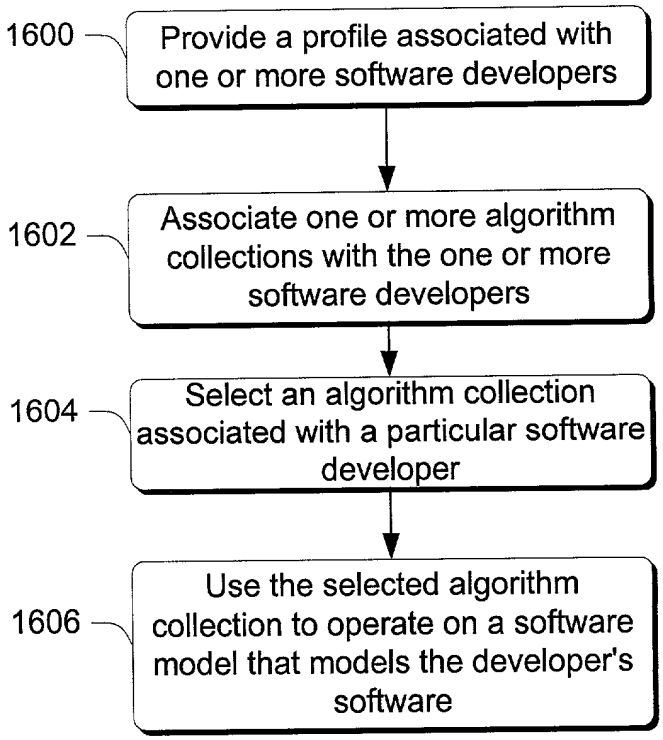
1600
Provide a profile associated with one or more software developers
1602
Associate one or more algorithm collections with the one or more software developers
1604
Select an algorithm collection associated with a particular software developer
1606
Use the selected algorithm collection to operate on a software model that models the developer's software

Fig. 16

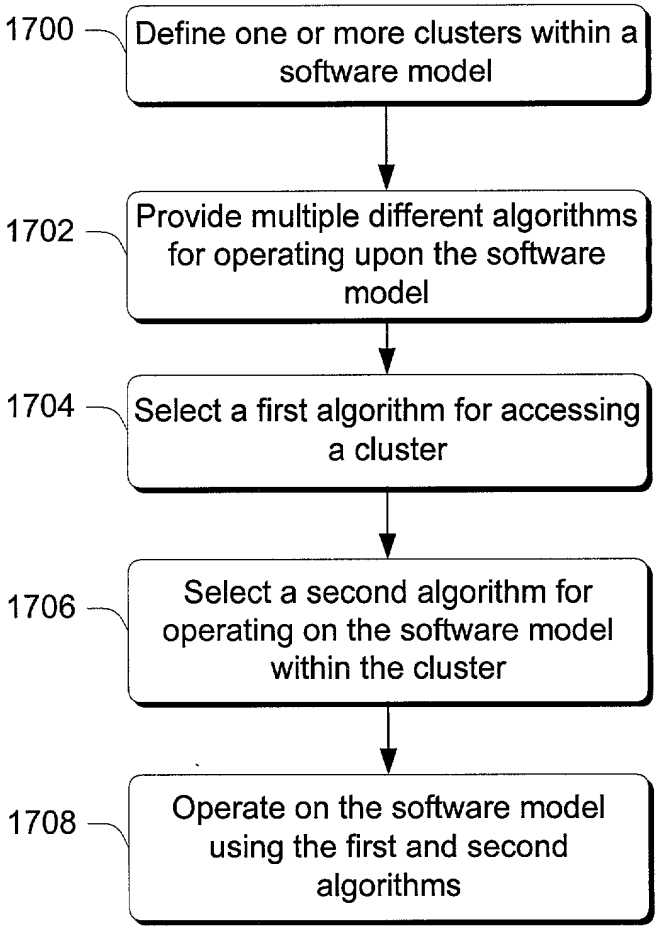
1700
Define one or more clusters within a software model
1702
Provide multiple different algorithms for operating upon the software model
1704
Select a first algorithm for accessing a cluster
1706
Select a second algorithm for operating on the software model within the cluster
1708
Operate on the software model using the first and second algorithms

Fig. 17